HISTOPATHOLOGICAL STUDY OF CNS TUMOURS AND THE ROLE OF GFAP EXPRESSION IN NEUROEPITHELIAL TUMOURS

ABSTRACT

INTRODUCTION

The CNS tumours are the most notorious tumours among all cancers. Neuroepithelial tumours constitute the major constituent among CNS tumours with an incidence of 56%. Glial fibrillary acidic protein (GFAP) is an intracytoplasmic class III intermediate filament protein expressed characteristically by tumours of neuroepithelial origin . It can thus help in differentiating between glial and non glial tumours and also various grades of gliomas.

AIMS & OBJECTIVES

1. An analyte of histopathology of CNS tumours at Thanjavur medical college in the period between June 2015 -2017.
2. To identify the immunohistochemical expression of GFAP in different types of neuroepithelial tumours.
3. Correlate the results of GFAP expression with the grade of tumours of neuroepithelial origin.

MATERIALS AND METHODS

This is a prospective study of 3 year duration done at ThanjavurMedical College in the period between June 2015 -2017. 140 neurological specimens

received in the department of Pathology were collected and data including patient's age sex , site, radiological findings were noted.Neuroepithelial tumours were segregated from non – neuroepithelial tumours and 19 selected cases from various grades of tumour were subjected to immunohistochemical study for GFAP expression .

A semiquantitative histochemical scoring was used to record the GFAP staining according to a study established by Catherine L. Nutt et al . The total score were thus correlated with grade of tumour and the expression of GFAP was thus quantitated in various grades of neuroepithelial tumours.The expression of GFAP were analyzed by X^2 – test or Fisher Freeman Holton's and Fisher's exact test and the results were statistically significant if the P value was < 0.05.

RESULTS

Astrocytomas were the commonest tumours followed by meningioma among the 140 histopathologically studied CNS cases. These tumours occurred in the age group between 40-60years with a high incidence in female population. Glial fibrillary acidic protein (GFAP) was immunopositive in 17 neuroepithelial tumours in a sample of 19 case study. Most of the cases which were expressive for GFAP were low grade tumours.

CONCLUSION

The GFAP intensity score was highest in the low grade tumours.The proportional score and the Glioma score had an inverse correlation with the grade of the tumour with a significant P value of < 0.001.Thus , Glial Fibrillary Acidic Protein (GFAP) has a great value in diagnosing and also in grading of neuroepithelial neoplasms**.**

KEY WORDS :CNS tumours , Histopathology , Astrocytoma ,Neuroepithelial tumours, GFAP .